

Claims:

1. Modulation identification device having a first input (2) for a modulated RF signal to be identified, a second input (3) for a second RF signal having a frequency essentially corresponding to the carrier frequency of the modulated RF signal and at least one output for a flag (10) indicating a modulation type identified, wherein the device (1) comprises:

- a n-port junction (17), n being an integer equal to or larger than three, being supplied with the modulated RF signal and the second RF signal and outputting at least one third RF signal to at least one power detector (18), and
- a signal processing unit (6) for processing the output of the power detector (18) to generate the at least one flag (10).

2. Modulation identification device according to claim 1, characterized by

a unit (9) for averaging at least one branch of the output of the power detector (18) over a predetermined numbers of symbols before it is supplied to the signal processing unit (6).

3. Modulation identification device according to claim 1, characterized in that

the signal processing unit (6) comprises at least one comparison unit (11, 12) for comparing a processed output of the at least one power detector (18) with at least one predetermined threshold.

4. Modulation identification device according to claim 3, characterized in that

the at least one threshold is calculated on the basis of at least one relative power ratio, the relative power ratio being the ratio of the current processed output of the at least one power detector (18) and an average processed output of the at least one power detector (18).

5. Modulation identification device according to claim 3,

characterized in that

the signal processing unit (6) comprises at least one counter (13) for counting the number (n_{hit}) of hits for which the processed output of the at least one power detector (18) satisfies at least one predetermined comparison condition, the comparison condition being based on the at least one threshold.

6. Modulation identification device according to claim 5,

characterized in that

the signal processing unit (6) comprises a calculation unit (15) for calculating a probability for each modulation type to be identified on the basis of the number of hits.

7. Modulation identification device according to claim 6,

characterized in that

the signal processing unit (6) is designed to output a flag (10) for an identified modulation type in case the corresponding calculated probability exceeds a predetermined probability threshold.

8. Modulation identification device according to claim 1,

characterized in that

the signal processing unit (6) is provided with an input (4) for a-priori information on the symbol duration of the modulated RF signal.

9. Software defined radio device,

characterized in that

it comprises a modulation identification device (1) according to claim 1.

10. Method for identifying the modulation type of a wirelessly transmitted modulated RF signal,

the method comprising the following steps:

- supplying (2, 3) the modulated RF signal and a second RF signal having a frequency essentially corresponding to the carrier frequency of the modulated RF signal respectively to the input of a n-port junction (5) outputting at least one RF signal, n being an integer larger than three,
- signal processing (6) the at least one output RF signal of the n-port junction to generate (15) at least one flag (10) indicating the identified modulation type of the modulated RF signal.

11. Method according to claim 10,

characterized in that

at least one branch of the output of the n-port junction is averaged (9) over a predetermined **number** of symbols.

12. Method according to claim 10,

characterized in that

the step of signal processing (6) comprises the step of comparing (11, 12) a processed output of the n-port junction with at least one predetermined threshold.

13. Method according to claim 12,

characterized in that

the step of signal processing (6) furthermore comprises the step of counting (13) the number of hits for which the processed output of the n-port junction (5) satisfies at least one predetermined comparison condition.

14. Method according to claim 13,

characterized in that

the step of signal processing (6) furthermore comprises the step of calculating (15) a probability for each modulation type to be identified on the basis of the number of hits.

15. Method according to claim 14,

characterized in that

the step of signal processing (6) furthermore comprises the step of outputting (10) a flag for a identified modulation type in case the corresponding calculated probability exceeds a predetermined probability threshold.

16. Use of a n-port junction device (5) having two RF inputs and at least one RF output for identifying the modulation type of a wirelessly transmitted modulated RF signal supplied to a first of the two RF inputs, without a-priori knowledge of the modulation type, n being an integer larger than three.

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